Number L.1
Section Brakes

Sheet 1 (of 2)
Date January, 1960

DISC BRAKE MASTER CYLINDER RECONDITIONING

Models affected

All cars fitted with disc brakes

A new type of master cylinder is now fitted to cars with disc brakes and the assembly of internal parts, supplied as a reconditioning kit (Part number 8250), can be incorporated in the existing body of earlier type master cylinders when reconditioning master cylinders of that type. Individual parts are not supplied separately.

The new type of master cylinder was introduced at the following chassis numbers:

	R.H. Drive	L.H. Drive
2.4 litre Mark 2	100473	125120
3.4 litre Mark 2	150346	175144
3.8 litre Mark 2	200092	210676
Mark IX	773392	792257
XK.150 Open 2 seater	820066	832114
Drop Head Coupe	827506	838590
Fixed Head Coupe	825127	836635

When reconditioning a brake master cylinder of the type shown in Fig.1. attached, the following procedure should be adopted.

(1) Remove the dust excluder from the head of the master cylinder.

(2) Remove the circlip (using circlip type pliers if available, alternatively, round nose pliers may be used). This will release the push rod complete with dished washer.

(3) Withdraw the piston and valve assembly complete with springs and supports.

(4) Discard the piston and valve assembly (items 3, 5, 6, 7, 8, 9, 10 and 11 on Fig.1) and the circlip (12).

/Continued

(5) Wash cylinder, push rod, rubber dust excluder in methylated spirit or clean brake fluid. Check that cylinder bore is in good condition and that dust excluder and dished washer are undamaged.

(6) As the piston and valve assembly are not anchored together, ensure during fitting that the piston end of the valve stem locates in the piston bore. (See Fig.2.)

(7) Lubricate the cylinder bore with brake fluid; insert the piston and valve assembly until the piston fitting sleeve engages in the mouth of the cylinder. Push the piston firmly through the fitting sleeve and remove the sleeve when the piston assembly is fully home in the cylinder bore.

Note: A special lubricant is packed between piston seals, therefore it is important that fitting sleeve is not removed until piston is correctly located in cylinder.

(8) Position the push rod and depress the piston sufficiently to allow the dished washer to seat on the shoulder at the head of the cylinder. Fit the new circlip and check that it fully engages the groove.

(9) Fill the dust excluder with clean Wakefield Rubber Grease H.95/59. (Tube in kit).

(10) Reseat the dust excluder around the head of the master cylinder.

(11) Remove the existing identification tab and fit new tab supplied.

Note: During the whole of the servicing operation use only clean brake fluid, Wakefield Crimson, to SAE.70R1. After refitting the master cylinder to the car and bleeding the system, make a careful check of all units, pipes and fittings for leaks.

The part numbers of the new type master cylinders are as follows:

2.4 litre, 3.4 litre, 3.8 litre Mark 2	C.16469
XK.150	C.16470
Mark 1X	C.16471

The identification tab fitted to these types of master cylinders and the tab included in the reconditioning kit 8250 have a widened portion as indicated by the arrow in Fig.3.

/Cont'd...

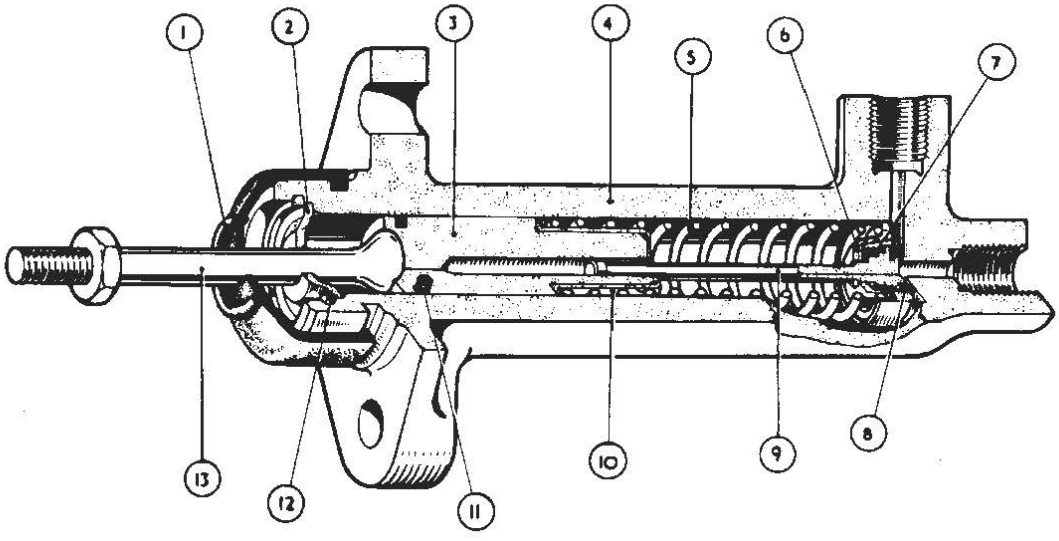

FIG 1.

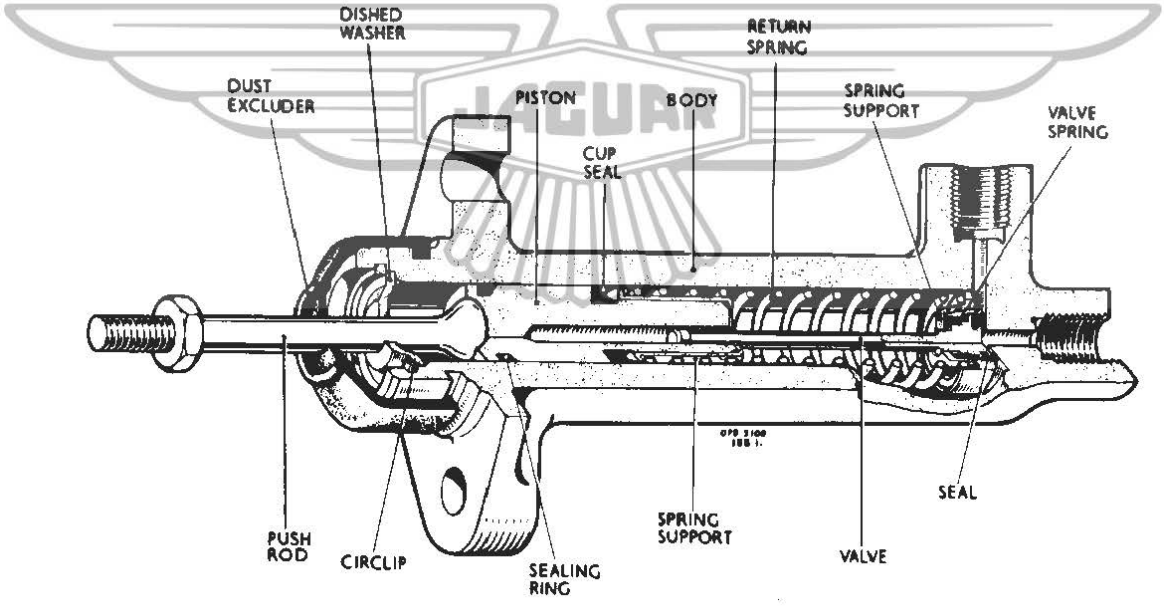

FIG 2.

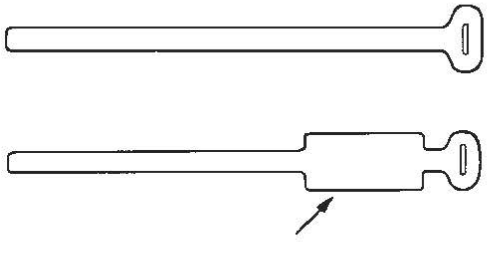

FIG. 3

JAGUAR

SERVICE BULLETIN

Number L.3
Section Brakes

Sheet 1 (of 1)
Date March, 1960

HANDBRAKE CONNECTING LINK

Models affected	Commencing Chassis numbers	
	R.H. Drive	L.H. Drive
XK.150 - Drop Head Coupe	827510	-
- Fixed Head Coupe	-	836724

On cars with the above chassis numbers and onwards a longer handbrake connecting link is fitted to improve the efficiency of the handbrake. The connecting link has two holes at its lower end and for maximum efficiency the pin securing the link to the handbrake cross-shaft lever must be inserted in the lower hole.

The new connecting link (Part number C.16866) may be used to replace the previous link (Part number C.8316) on cars prior to the above chassis numbers.

VACUUM CYLINDER LUBRICANT

Models affected

Cars fitted with a Lockheed servo

The vacuum cylinder oil "Cosmolubic 100" recommended for lubrication of the vacuum cylinder (see pages L.38 and L.42 of the 2.4/3.4 litre Service Manual) has now been superseded by "Shell Tellus 33".

"Shell Tellus 33" is available in eight ounce plastic bottles.

Number L.8
Section Brakes

Sheet 1 (of 1)
Date June, 1961

INTRODUCTION OF CAST IRON BRAKE CYLINDERS

Models affected	Commencing Chassis Numbers	
	R.H. Drive	L.H. Drive
2.4 litre Mark 2 with disc wheels	106897	126283
2.4 litre Mark 2 with wire wheels	106839	126295
3.4 litre Mark 2 with disc wheels	154315	176964
3.4 litre Mark 2 with wire wheels	154321	176938
3.8 litre Mark 2 with disc wheels	203627	216474
3.8 litre Mark 2 with wire wheels	203576	216374

On cars with the above chassis numbers and onwards cast iron brake cylinder blocks replace malleable iron.

With this change the self adjustment arrangement is modified. The spring washer, shown in Fig.2, Section L of the Mark 2 Service Manual is no longer used, the retraction being by a coil spring located in the piston.

Also, whereas the original type had a separate piston and backing plate (see Fig.14, Section L of the Mark 2 Service Manual) the new type is of integral construction with no end plate.

It is therefore necessary when removing or replacing the piston seal or dust seal to stretch the rubber over the end of the piston. When replacing the piston seal it should be well lubricated with brake fluid and great care taken not to scratch or damage the inside surface of the seal or the groove in the piston.

PRECAUTIONS TO BE OBSERVED WHEN RETURNING MASTER CYLINDERS AND SERVO UNITS

(All Models)

When returning master cylinder and servo units to the factory, distributors and dealers are requested to plug the hydraulic connections to prevent the possible ingress of mineral oil which may give a misleading impression of the condition of the rubber seals.

Usually, it will be possible to use the plastic blanks provided in the replacement master cylinder or servo unit.

JAGUAR SERVICE BULLETIN

Number L.9
Section Brakes

Sheet 1 (of 1)
Date June, 1961

HYDRAULIC BRAKE FLUIDS

With reference to the instructions issued in Service Bulletin number 275 headed "Hydraulic Brake Fluids - Important" please note that with the introduction of a Dunlop Disc Brake Fluid the recommendations are now as follows:-

DUNLOP DISC BRAKE EQUIPPED CARS

Preferred Fluid

Dunlop Disc Brake Fluid (S.A.E. 70 R3)

Alternative Fluids

Recognised brands of brake fluid conforming to specification S.A.E. 70 R3 such as:

Castrol/Girling Crimson Brake Fluid
Lockheed Super Heavy Duty Fluid

For Competition Use (Races or Rallies)

Dunlop Disc Brake Racing Fluid (~~Spec: H282/58~~ coloured blue)

(This fluid also conforms to S.A.E. 70 R3)

CARS EQUIPPED WITH DRUM BRAKES (Earlier cars)

Recognised brands of brake fluid conforming to specification S.A.E. 70 R3 such as:

Castrol/Girling Crimson Brake Fluid
Lockheed Super Heavy Duty Brake Fluid
Dunlop Disc Brake Fluid

Note: Dunlop Disc Brake Fluid which is amber in colour will be supplied only in one quart or one half pint tins. The reason for supplying fluid in comparatively small quantities is to avoid the possibility of water contamination resulting in lowering of the boiling point, or contamination due to the transfer of fluid from large containers to small measures,

/Continued...

which may have been used for other purposes.

Mixing of Fluids

Note that Dunlop Disc Brake Fluid can be mixed with other brake fluids of S.A.E. 70 R3 specification. If, however, there is any doubt regarding the specification of the brake fluid in the system, it is advisable to bleed the system and refill with the correct fluid.

It is important to note that mixing S.A.E. 70 R3 fluid with S.A.E. 70 R1 fluid will only result in S.A.E. 70 R1 performance.

JAGUAR

SERVICE BULLETIN

Number L.9 (2nd issue)
Section Brakes

Sheet 1 (of 1)
Date December, 1962.

This Service Bulletin supersedes the original issue of June 1961 which should be destroyed.

HYDRAULIC BRAKE FLUIDS.

With reference to the instructions issued in Service Bulletin number 275 headed "Hydraulic Brake Fluids - Important" please note that with the introduction of a Dunlop Disc Brake Fluid the recommendations are now as follows:-

DUNLOP DISC BRAKE EQUIPPED CARS

Preferred Fluid

Dunlop Disc Brake Fluid (S.A.E. 70 R3)

Alternative Fluids

Recognised brands of brake fluid conforming to specification S.A.E. 70 R3 such as:

Castrol/Girling Crimson Brake Fluid
Lockheed Super Heavy Duty Fluid

For Competition Use (Races or Rallies)

Dunlop Disc Brake Racing Fluid (Colour: Blue)
(This fluid also conforms to S.A.E. 70 R3)

CARS EQUIPPED WITH DRUM BRAKES (Earlier cars)

Recognised brands of brake fluid conforming to specification S.A.E. 70 R3 such as:

Castrol/Girling Crimson Brake Fluid
Lockheed Super Heavy Duty Brake Fluid
Dunlop Disc Brake Fluid

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Note: Dunlop Disc Brake Fluid which is amber in colour will be supplied only in one quart or one half pint tins. The reason for supplying fluid in comparatively small quantities is to avoid the possibility of water contamination resulting in lowering of the boiling point, or contamination due to the transfer of fluid from large containers to small measures, which may have been used for other purposes.

Mixing of Fluids

Note that Dunlop Disc Brake Fluid can be mixed with other brake fluids of S.A.E. 70 R3 specification. If, however, there is any doubt regarding the specification of the brake fluid in the system, it is advisable to bleed the system and refill with the correct fluid.

It is important to note that mixing S.A.E. 70 R3 fluid with S.A.E. 70 R1 fluid will only result in S.A.E. 70 R1 performance.

JAGUAR SERVICE BULLETIN

Number L.10
Section Brakes

Sheet 1 (of 1)
Date August, 1961.

SELF ADJUSTING HANDBRAKES

Models affected	Commencing Chassis Numbers	
	R.H.Drive	L.H.Drive
2.4 litre Mark 2	108998	126479
3.4 litre Mark 2	156343	177360
3.8 litre Mark 2	205633	217696

On cars with the above chassis numbers and onwards self adjusting handbrakes are fitted.

The self adjusting mechanism is at the rear calipers and takes the place of the handbrake operating lever; the operating mechanism is protected by a dust cover plate.

The adjustment of the handbrakes occurs automatically as the linings wear and is effected by a spring loaded pawl rotating a toothed nut on the adjusting bolt when the handbrake off clearance between the disc and the linings is in excess of a total of .006" (.15 mm). One tooth movement of the rachet nut is the equivalent of .0015" (.04 mm) movement of the linings.

Setting the Handbrakes

If a rear caliper has been removed from the car or if new handbrake friction linings have been fitted, carry out the following procedure.

With the retaining split pin removed from the screwdriver slot in the adjusting bolt screw the bolt in or out until there is a distance of 7/16" (11.1 mm) between the friction linings, that is, the thickness of the disc plus 1/16th" (1.5 mm).

Refit the split pin through the screwdriver slot in the head of the adjusting bolt. If the caliper is removed from the car it should now be refitted.

Pull and release the handbrake lever at the caliper

/continued.....

repeatedly when the ratchet will be heard to "click-over". Repeat the operation until the ratchet will not operate which will indicate that the correct clearance is maintained between the disc and friction linings.

Connect up the two cross cables to the handbrake operating levers and check the cable adjustment as follows:-

Handbrake Cable Adjustment

Fully release the handbrake lever in the car. Slacken the locknut at the rear end of the main cable.

Adjust the length of the main cable by screwing the threaded end of the cable into the fork end to a point just short of where the handbrake operating levers at the calipers start to move. Check the adjustment by pressing each handbrake operating lever at the same time towards the calipers; if the top of the compensator on the rear axle tends to move appreciably the cable is too tight.

When correctly adjusted a certain amount of slackness in the cables will be apparent; no attempt should be made to place the cables under tension, otherwise the handbrakes may bind.

MASTER CYLINDER PUSH-ROD ADJUSTMENT

("E" Type)

A more efficient method of setting the brake master cylinder push-rod clearance has been devised and is as follows:

Ensure that the brake pedal and the servo operation lever are in the "fully off" position.

Adjust the top master cylinder push-rod by slackening the lock nut and screwing the rod into the yoke, 37, Fig.23 in the "Brake" section of the "E" Type Service Manual, until all free play has been taken up. Ensure that the booster operating lever (17) does not move from the "fully off" position.

Screw the push-rod out of the yoke (37) 1/3 of a turn (that is, two flats of the locknut) and tighten up the locknut.

Check the adjustment by placing a screwdriver between the top of the balance link (29) and the pedal housing (4) and levering towards the master cylinders when the free play will be felt.

Note: It is most important that the operating lever does not move from the fully off position - this may be checked visually while adjusting the push-rod.

REMOVAL AND REFITTING OF DISC BRAKE CALIPER CYLINDER BLOCK

(Cars with Quick Change Pad type Disc Brakes)

When the cylinder block has been removed from the brake caliper (see Fig.14, "Brake" section of the Mark 2 Service Manual) for any reason, it is most important that one of the flats on the backing plate should be parallel to the support plate when refitting the cylinder block. If the backing plate should be misaligned, the support plate will be forced into contact with the brake disc by means of the piston backing plate.

JAGUAR SERVICE BULLETIN

Number L.13.
Section Brakes

Sheet 1 (of 1)
Date December, 1961

BRAKE PEDAL BEARING

Models affected		Commencing Chassis Numbers	
		R.H. Drive	L.H. Drive
"E" Type	Fixed Head Coupe	860021	885105
	Open 2-seater	850233	875859

On cars with the above chassis numbers and onwards, the brass bush in the brake and clutch pedal housing is replaced by an impregnated plastic bush. Lubrication at the intervals recommended on Page L.9 "Brake" section of the "E" Type Service Manual and Pages 50 and 53 of the "E" Type Operating Handbook, is now no longer necessary.

SELF-ADJUSTING HANDBRAKE CONVERSION KIT

(Mark 2 models only)

Kits for converting the handbrake mechanism to the self-adjusting type on Mark 2 models only, are now available from the Spares Division. The kit (Part Number 8951) consists of the self-adjusting handbrake assembly, pivot bolts, tab washer and retractor plate. To fit the handbrake assembly the following procedure should be carried out.

Chock the front wheels, jack up the back of the car and remove both rear road wheels. Disconnect the short cables at the operating levers by removing the split pin and washer and withdrawing the clevis pin. Knock back the tabs and remove the pivot bolts together with the retractor plate and tab washer. The handbrake assembly may now be withdrawn forwards.

Fit the self-adjusting handbrake assembly into position, fit the retractor plate, ensuring that the retractor fingers are located in the holes in the pad carriers, fit the tab washer and secure the assembly with the pivot bolts, knocking up the appropriate tabs. Attach the cables to the operating levers, opening the fork ends if necessary, and secure with the original clevis pin and washer and new split pin. Set the handbrakes and adjust the handbrake cable as described in Service Bulletin number L.10.

This conversion kit <u>cannot</u> be fitted to Mark 1 models.

Number L.17.
Section Brakes

Sheet 1 (of 1)
Date April, 1962

SELF-ADJUSTING HANDBRAKE CONVERSION KIT

(Mark 2 Models)

Despite the fact that a Service Bulletin (Number L.13) has been issued on the subject, we are receiving a great number of enquiries concerning the availability of a self-adjusting handbrake conversion kit for earlier Mark 2 models.

As was advised, the part number of the kit is 8951 and the retail price is included in the Master Parts Price List. No allowance can be made for displaced material.

Fitting instructions are included in Service Bulletin number L.13.

MODIFICATION TO OVERCOME KNOCK FROM SERVO ON BRAKE APPLICATION

Models affected	Commencing Chassis Numbers	
	R.H. Drive	L.H. Drive
2.4 litre Mark 2	112059	126724
3.4 litre Mark 2	159068	177962
3.8 litre Mark 2	207930	220553

On cars with the above chassis numbers and onwards, a modified servo unit (Part No. C.19612) is fitted. This unit incorporates a two-stage air valve (C, Fig.21. on page L.22. of the Mark 2 Service Manual) to reduce noise on brake application.

The new cover and air valve assembly (Part No. 9205) is interchangeable with the previous type fitted. The part number of Repair Kit which incorporates the two-stage valve is 9211.

Certain other changes to the servo unit took place at this point. These are detailed in Spares Bulletin number K.43.

Number L.21
Section Brakes

Sheet 1 (of 1)
Date October, 1962.

SELF ADJUSTING HANDBRAKES - IMPORTANT

(Disc brake models fitted with self-adjusting handbrakes)

The following are revised instructions for refitting the handbrakes and renewing the handbrake friction pads, in order to ensure centralisation of the pad carriers. Failure to observe these instructions may cause a squeal from the handbrakes on cornering.

REFITTING THE HANDBRAKE ASSEMBLY

Ensure that the handbrake pivot bolts are slack

Remove the split pin from the head of the adjuster bolt and slacken the bolt until there is approximately ¼" (6.35 mm) free movement between the head and outer pad carrier.

Pull the inner and outer pad carriers away from the disc bending the brass retraction fingers until there is 1/16" (1.6 mm) clearance between each pad and the disc.

Take up the free movement at the adjuster bolt by tightening until the bolthead is in light contact with the outer pad carrier seating.

Fit a new split pin to lock the adjuster bolt.

Pull and release the handbrake lever repeatedly until the ratchet ceases to operate, which will indicate that the correct adjustment has been obtained.

With the handbrake applied reasonably hard, tighten the pivot bolts and secure with the tab washer.

NOTE: It is ESSENTIAL that the brass retraction fingers are in good condition i.e. not badly distorted. The ends which fit into the pad carriers must be inserted fully into the holes to avoid the possibility of twisting the fingers.

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REFITTING THE HANDBRAKE ASSEMBLY AFTER PAD RENEWAL

With the friction pad carriers removed, withdraw the old pads by slackening the nuts in the outer face of each carrier and utilizing a hooked tool in the hole of each pad securing plate. Fit new pads, short face upwards, ensuring that each pad locates the head of the retaining bolt. Fit new retraction fingers and assemble the carrier to the main calipers, leaving the pivot bolts slack.

Pull and release the handbrake lever repeatedly until the ratchet ceases to operate, which will indicate that the correct adjustment has been obtained.

With the handbrake applied reasonably hard, tighten the pivot bolts and secure with the tab washer.

Note: It is recommended that new retraction fingers are fitted when replacing the handbrake pads, but they should on no account be bent to suit the calipers.

Reconnect the handbrake compensator linkage to the operating levers and check the handbrake cable adjustment.

The September issue of the BRAKES section bulletin was incorrectly numbered. Please alter this bulletin from L.21 to L.20.

JAGUAR SERVICE BULLETIN

Number L.23.
Section Brakes

Sheet 1 (of 1)
Date January, 1963.

INTRODUCTION OF MINTEX M 59 FRICTION PADS

Model affected	Commencing Chassis Numbers	
	R.H.Drive	L.H.Drive
Mark 10	302914	352051

Commencing at the above chassis numbers Mintex M.59 brake friction pads (Part number 9682 for set of 4) are fitted in place of Mintex M.33 pads.

The M.59 pads are identified by stripes of brown and white paint on the end face, the M.33 pads being identified by red and white stripes.

M.59 pads can be used to replace M.33 pads provided they are fitted in car sets (8 off).

It is also permissible to fit M.59 pads to 'E' Types in car sets (8) but they should not be used on Mark 1 and Mark 2 cars.

Spares Bulletin No. K.54 refers.

RETURNING MASTER CYLINDERS AND SERVO UNITS UNDER GUARANTEE

(All Models)

All distributors and dealers are requested to strictly observe the instructions given under "Precautions to be observed when returning master cylinder and servo units" in Service Bulletin L.8.

If the units are not returned in the condition stated, guarantee claims will not be accepted.

JAGUAR

SERVICE BULLETIN

Number L.25.
Section Brakes.

Sheet 1 (of 1)
Date April, 1963.

INTRODUCTION OF HANDBRAKE CABLE SUPPORT BRACKET.

Models affected.	Commencing Chassis Numbers. L.H.Drive.
2.4 litre Mark 2.	127083
3.4 litre Mark 2.	179029
3.8 litre Mark 2.	222332

In conjunction with the fitting of a 3" (7.62 cm) diameter propeller shaft to Mark 2 Overdrive Models (See Service Bulletin G.5), it is necessary to attach a handbrake cable support bracket (Part No. C.22402/3 to L.H.Drive cars to prevent the cable fouling the larger diameter propeller shaft.

If the 3" (7.62 cm) diameter propeller shaft is fitted to cars already in service, it will be necessary to fit the above bracket adjacent to the front seat belt floor anchor bracket ("A" in illustration)

Spares Bulletin No. K.59 refers.

JAGUAR

SERVICE BULLETIN

Number L.28.
Section Brakes.

Sheet 1 (of 1)
Date October, 1963.

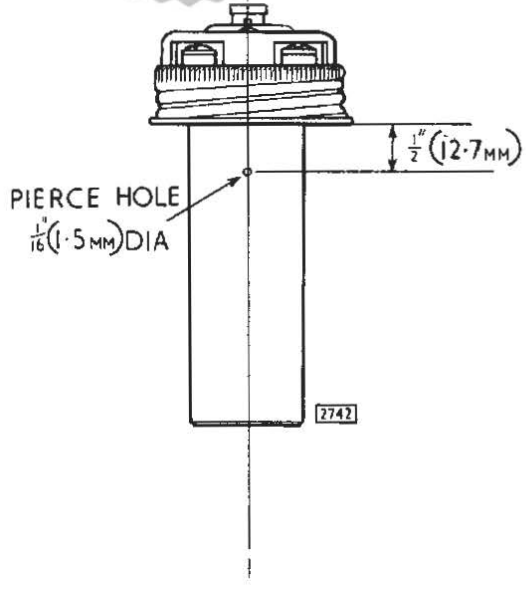
BRAKE FLUID/HANDBRAKE WARNING DEVICE.

(All models).

Isolated cases have come to our notice where the warning light has remained 'on' with the handbrake released and the brake fluid level correct.

This has been found to be due to a pressure difference between the inside and outside of the float container.

The remedy is to pierce (do NOT drill) a 1/16" (1.5mm) hole through the float container in the position shown in the illustration.



JAGUAR

SERVICE BULLETIN

Number L.30.
Section Brakes.

Sheet 1 (of 1)
Date January, 1964.

HYDRAULIC FLUIDS FOR DISC BRAKE CARS.

It is important that the correct brake fluid is used in the Dunlop braking systems fitted to Jaguar cars and we wish to draw your attention to our recommendation for Dunlop Disc Brake Fluid, which is also being used for initial filling in the factory.

Dunlop Disc Brake Fluid has a high boiling point and it has been developed especially to suit the requirements of the Dunlop braking system.

Supplies are available world wide from Castrol Limited who produce and market this fluid exclusively for Dunlop. In the event of the fluid not being locally available only fluid guaranteed to conform to S.A.E 70 R3 specification, which is fully miscible with Dunlop Disc Brake Fluid, may be used as an alternative.

The use of fluids other than that recommended may cause rapid deterioration of the rubber seals. Lubricating oil, petrol and paraffin are harmful to the rubber seals and great care must be taken to avoid contamination from vessels or funnels when filling brake systems.

The boiling point of all brake fluids is reduced by water contamination and caps on containers must therefore be replaced after use to prevent the fluid absorbing moisture from the atmosphere. It is also recommended that the fluid in the system is changed approximately every 25,000 miles (40,000 km).

BRAKE FLUID RESERVOIR CAP COVER.

Models affected.	Commencing chassis numbers.	
	R.H.Drive.	L.H.Drive.
'E' Type Open 2 seater	850807	880760
Fixed head coupe	861427	889697

Commencing at the above chassis numbers protective covers are provided over the brake fluid reservoir caps. The covers give further protection to the brake fluid and to the level indicators.

The protective covers (Part number C.23627) may be fitted to previous cars.

JAGUAR SERVICE BULLETIN

Number L.31.
Section Brakes.

Sheet 1 (of 1)
Date March, 1964.

DUNLOP DISC BRAKE PRESERVATIVE FLUID.

(All disc brake models)

The preservative fluid mentioned in Service Bulletin L.29 is now available from the Jaguar Spares Division in 8oz tins (Part number 10263).

The purpose of this fluid (red in colour) is to assist in preventing corrosion and should be used in the following manner when overhauling the calipers.

Before fitting the piston to the wheel cylinder coat the inside surface of the rubber dust cover with the preservative fluid paying particular attention to the edges. Also lightly coat the dust cover where it fits in the annular groove in the piston.

Note: There may be slight initial leakage of the preservative fluid past the dust cover and this may be confused with leakage of brake fluid past the piston seal. If any doubt exists observation should be kept on the brake fluid level.

JAGUAR

SERVICE BULLETIN

Number L.32.
Section Brakes.

Sheet 1 (of 1)
Date June, 1964.

VACUUM RESERVOIR ATTACHMENT.

(Mark 2 models)

Following some cases of severe salt corrosion affecting the attachment brackets for the vacuum reservoir (under the right-hand front wing) resulting in fatigue it is essential that the Fixing Rod Assembly used on later Mark 2 cars should be fitted. At the same time the fixing brackets should be examined.

Distributors and Dealers should arrange this as cars come in for service and details of parts required together with chassis numbers after which the fixing rod was fitted in production are given below. A claim may be submitted for the parts shown only.

	R.H.Drive.	L.H.Drive.
2.4 litre Mark 2	116200	127334
3.4 litre Mark 2	164495	179522
3.8 litre Mark 2	231603	223125

Part No.	Description.	No. off.
C.22425	Fixing rod assembly for stoneguard	1
UFN.119/L	Nut	2
C.723/A	Shakeproof washer	2
UFS.119/4R	Setscrew	1

The fixing rod is fitted between the reservoir and the vacuum servo cowl. It will be necessary to drill 13/64" (5.2 mm) holes in the cowl and reservoir flange to take the fixing rod and setscrew.

Spares Bulletin K.67 refers.

BRAKE BLEED NIPPLES RE-POSITIONED.

Models affected.	Commencing chassis numbers.	
	R.H.Drive.	L.H.Drive.
2.4 litre Mark 2	117537	127516
3.4 litre Mark 2	166443	179812
3.8 litre Mark 2	232583	223561

Commencing at the above chassis numbers the position of the brake bleed nipple is changed from the outside to the inside of each caliper. The hydraulic pipes are modified to suit.

This allows the brakes to be bled with the wheels in position if so desired.

Spares Bulletin K.73 refers.

JAGUAR

SERVICE BULLETIN

Number L.33.
Section Brakes.

Sheet 1 (of 1)
Date October, 1964.

BRAKE PULLING.

(Mark 10 model)

If trouble is experienced with brakes pulling to one side which cannot be traced to an irregularity in the braking system the following check should be carried out.

Measure the relative heights of the outer ends of the steering drop arm and idle lever and if they are not within ± 1/16" (1.6 mm) of each other a suitable packing washer (up to a maximum thickness of 3/32" (2.4 mm) should be fitted between the steering idler bracket and the front cross-member until the above condition is obtained. It will invariably be found that the washer needs to be fitted to the bottom bolt position of the idler assembly and washer part number FW106T will usually be found to be suitable.

REPLACEMENT OF BRAKE SERVO UNDER GUARANTEE.

(Mark 2 and 3.4/3.8 'S' models)

It has been established that Lockheed servo units are being replaced unnecessarily and consequently liability is being rejected against the terms of guarantee by the manufacturers.

If trouble is experienced with the braking system every possible effort must be made to establish the exact cause and to replace only the part concerned or carry out the necessary rectification.

In future, if units are replaced unnecessarily the claim will be rejected and the unit concerned made available for collection by the distributor or dealer.

JAGUAR SERVICE BULLETIN

Number L.34.
Section Brakes.

Sheet 1 (of 1)
Date October, 1964.

INTRODUCTION OF BRAKE DISC SHIELDS

Models affected.	Commencing chassis numbers.	
	R.H.Drive	L.H.Drive
2.4 litre Mark 2	118052	127636
3.4 litre Mark 2	167631	179994
3.8 litre Mark 2	233264	223960
3.4 'S'	1B1838	1B25230
3.8 'S'	1B51607	1B75989

On cars with the above chassis numbers and onwards shields are fitted to the inside of the brake discs to reduce the tendency for the inner brake pad to wear more quickly than the outer pad.

The shields can be fitted to cars prior to the above numbers if requested by customers, but at their own cost.

If shields are fitted it will be necessary to cut off the corners of the bump stop brackets and the lugs on the lower wishbone as shown in the illustration overleaf to avoid fouling of the shields on full lock.

Spares Bulletin No. K.79 refers.

INTRODUCTION OF TYPE 8 (8" 20.3 cm) LOCKHEED SERVO UNIT.

Models affected.	Commencing chassis numbers.	
	R.H.Drive	L.H.Drive
3.4 'S'	1B2101	1B25286
3.8 'S'	1B52037	1B76292
	plus certain individual cars prior to these numbers.	

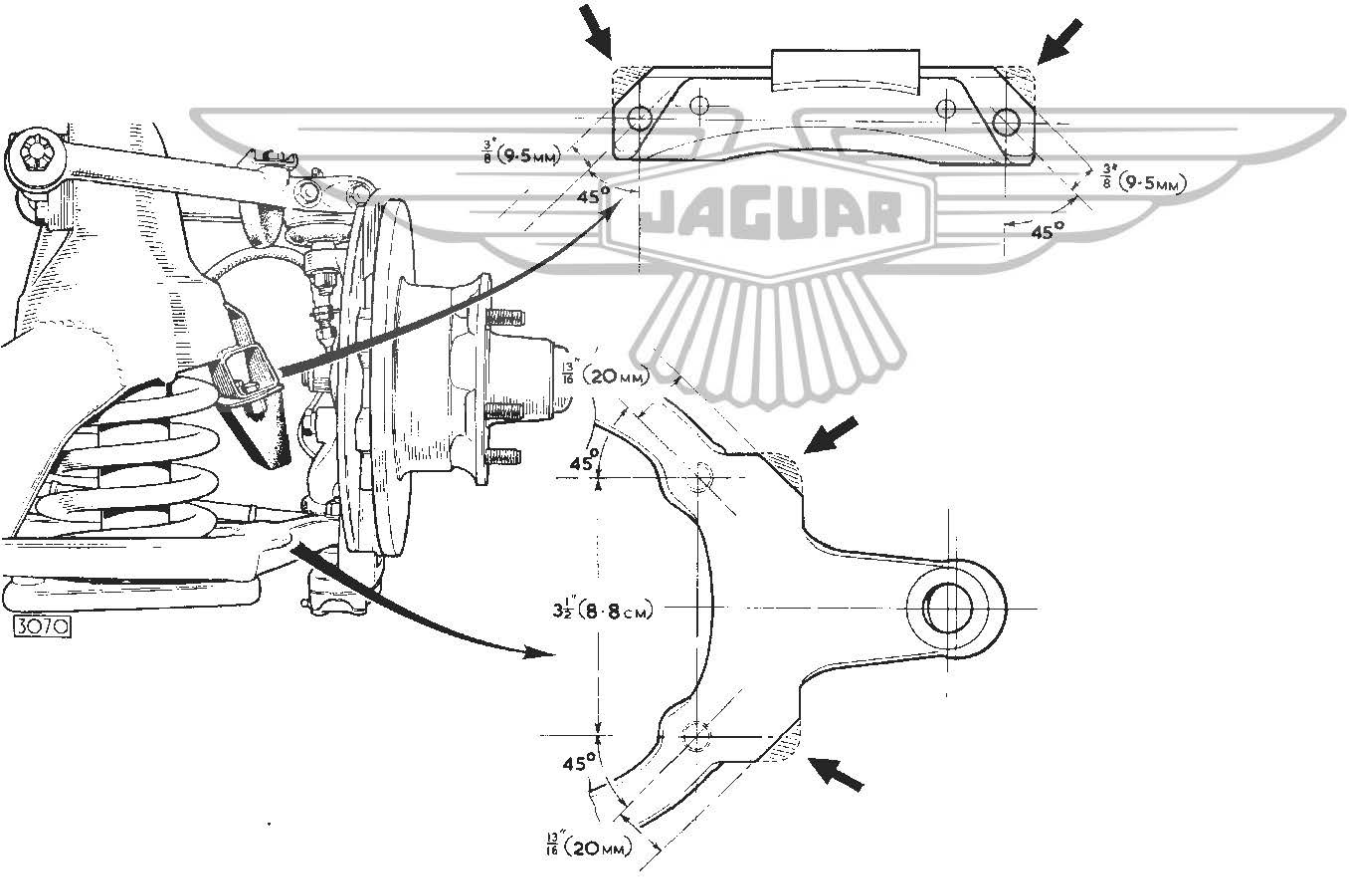
Commencing with the above chassis numbers an 8" (20.3 cm) servo unit is fitted in place of the original 6⅞" unit.

The new servo unit is of the diaphragm type in which there is no physical contact between the vacuum piston and cylinder. The vacuum piston push-rod is of a fixed length and there is no adjustment for clearance as there was on the 6⅞" servo.

/cont'd.....

The remote servo air cleaner fitted adjacent to radiator header tank on cars with the 6⅞" servo is no longer used and is replaced by a paper air cleaner mounted on the servo unit which requires renewing when the unit is overhauled.

In conjunction with this change the servo cowl, vacuum tank and hydraulic pipes are also modified.



JAGUAR SERVICE BULLETIN

Number L.35.
Section Brakes.

Sheet 1 (of 1)
Date October, 1964.

DISC BRAKE MASTER CYLINDER.

(Mark 2 and 3.4/3.8 'S' models)

In the event of a complaint being received on one of the above models, at a comparatively low mileage, of lengthening brake pedal travel or "sponginess" which can be temporarily cured by bleeding, the following instruction should be observed.

Fit a replacement master cylinder (Part number C.16469) ensuring that the date of manufacture which is stamped on the identification tag around the cylinder body is after 27.7.64. (For easy identification the tag is now in red polythene material).

As cars come in for service, the "feel" of the brake pedal should be checked to avoid the possibility of this having been overlooked by the owner.

NOTE: NO ACTION IS NECESSARY UNLESS THE ABOVE MENTIONED CONDITION IS EVIDENT.

As there is no change in part number, it is essential to observe the date of manufacture and all master cylinders supplied in future from the Jaguar Spares Division will have been manufactured after 27.7.64.

HOME DISTRIBUTORS AND DEALERS.

With regard to existing stocks, will you please place an emergency order with our Spares Division for a sufficient quantity of master cylinders to cover your requirements and on receipt of these make the necessary arrangement for all stocks of C.16469 master cylinders manufactured prior to 27.7.64 to be returned for credit.

OVERSEAS DISTRIBUTORS.

With regard to existing stocks held by yourselves and your Dealers, will you please place an emergency order with our Spares Division for a sufficient quantity of master cylinders to cover your requirements. On receipt of these units will you make the necessary arrangements for all stocks of C.16469 master cylinders manufactured prior to 27.7.64 to be scrapped and confirm this in writing to the Service Division enclosing the identification tags from the cylinders when credit will be issued to you.

JAGUAR SERVICE BULLETIN

Number L.36.
Section Brakes.

Sheet 1 (of 1)
Date December, 1964.

BRAKE SQUEAL.

(Series 2 Dunlop Disc Brakes)

Models affected.

Later Mark 1 2.4 and 3.4 litre
Mark 2 2.4, 3.4 and 3.8 litre
Mark 1X
XK.150
Mark 10 (3.8)
'E' Type (3.8 and 4.2)

In the event of this problem being encountered, the following action should be taken. It should be noted, that occasional slight squeak on first application from cold must be accepted.

Brake noise can take the following forms:

(a) Heavy squeal on most applications.
(b) Running squeak due to contact between main pads and disc.
(c) Running squeak due to contact between handbrake pads and rear discs.
(d) Intermittent squeak, pronounced when cornering, due to hand-brake pads in contact with rear discs.

Rectification falls into two categories:

Attention to main pads. (See Section A).
Attention to handbrake mechanism (See Section B).

The causes and remedial measures are not shown as a sequence of operation but Distributors and Dealers will act according to their findings.

SECTION A.

Symptom:- Heavy squeal on application or continuous running squeak without application.

1) Check that pads are all free in guides. Push back piston fully and refit pads correctly on pistons.

2) Check whether disc turns freely or that clearance exists between all main pads and discs when pedal is released after application. Lack of clearance indicates inadequate retraction for some reason.

/cont'd.....

NOTE: Use light pressure only - approximately 10 lbs (4.5 kg) pedal effort. If unbedded pads are fitted, clearance may not be measurable but disc should turn reasonably freely by hand.

Lack of retraction may be due to:

(a) Pads sticking in caliper.
(b) Wheel cylinder pistons sticking in cylinder or guide location for backing plate.
(c) Disc float due to excess end float in front hub bearings or axle shaft, as case may be.
(d) Disc run out due to machining of mounting flange or disc, dirt between faces, bent half shaft, etc.
(e) Sticking master cylinder piston affecting front, rear or all main pads, depending on model.

Remedial Action:-

(a) Remove pads, check for any corrosion or dirt build up and that backing plate has been properly engaged with button on piston. Check for undue marking on pad due to pressure by retaining clip. Clean up all side faces of pads and refit.

(b) If retraction is still not satisfactory, remove calipers, thoroughly clean off corrosion and accumulated dirt, but do not use abrasive, which would destroy cadmium plating. On Series 2 brakes fit wheel cylinder assemblies incorporating recess around pad mounting button on piston. If satisfactory retraction is not obtained, fit new caliper body using new wheel cylinder assemblies already on hand.

(c) Rectify end float condition in accordance with limits laid down in Service Manual.

(d) If excessive run out exists, check hub flange face, output flange face or for bent axle shaft as applicable and if satisfactory, replace disc and re-check.

(e) Check for sluggish return of master cylinder piston: if evident, service with appropriate repair kit, providing cylinder bore is satisfactory.

SECTION B.

Symptom:- Running squeal or intermittent squeal when cornering:

Remedial Action:-

1) Check that handbrake operating system is free and permits full return of handbrake. Note on Mark 2 cars the axle should be supporting the car to enable adjustment state to be checked.

2) Check end float of rear discs.

3) Check for oil contamination of handbrake.

4) Check adjuster mechanism for free movement and freedom from corrosion.

5) Re-adjust handbrake mechanism in accordance with instructions in Service Bulletin No. L.21.

JAGUAR

SERVICE BULLETIN

Number L.38.
Section Brakes.

Sheet 1 (of 1)
Date June, 1965.

MASTER CYLINDER - MODIFIED TYPE.

Models affected.	Commencing chassis numbers.	
	R.H. Drive	L.H. Drive
2.4 litre Mark 2	118651	127723
3.4 litre Mark 2	168663	180110
3.8 litre Mark 2	233790	224068
3.4 'S' Type	1B.2998	1B.25430
3.8 'S' Type	1B.53183	1B.77221

Commencing at the above chassis numbers a modified master cylinder (Part number C.25425) is fitted. The new master cylinder has a smaller diameter main spring than the previous type and the spring supports and piston are modified to suit.

Interchangeability.

The new master cylinder is interchangeable as an assembly with the previous type (Part number C.16469) but certain of the internal parts are not interchangeable.

DISC BRAKE SHIELDS.

(Mark 2 and 3.4/3.8 'S')

The attention of Distributors and Dealers is drawn to Service Bulletin L.34 and the availability of shields to protect the discs of the above models.

Fitting of the shields materially help in reducing brake pad wear and customers should be advised to have these shields fitted when having other brake service carried out.

JAGUAR SERVICE BULLETIN

Number L.39
Section Brakes

Sheet 1 (of 1)
Date November, 1965

IMPROVED HANDBRAKE ALIGNMENT

Models affected	Commencing Chassis No.	
	R.H.D.	L.H.D.
2.4 Litre Mark 2	119356	127868
3.4 Litre Mark 2	169632	180262
3.8 Litre Mark 2	234395	224207

From the above chassis numbers onward an improved method of handbrake caliper centralisation has been introduced to overcome any possible brake squeal.

Earlier cars may be modified to this improved condition by fitting a Handbrake Alignment Kit, Jaguar Part No. 10792, as follows:-

Fitting

Place the prongs of the retraction plates in the holes in the pad carriers.

Position the lower locating extension of the plates between the upper and lower bridge clamps and secure the clamps to the caliper with the original setscrews and locking tabs provided.

IMPORTANT: The retraction plates contained in the kit are handed, and when fitting these items it is ESSENTIAL to ensure that they are fitted correctly.

To check for the correct hand, lay the two plates on a flat surface with the prongs and locating extensions projecting upwards.

It will be seen that one of the plates has a square-cut face uppermost.

This retraction plate MUST ALWAYS be fitted to the left-hand caliper.

Check that the retraction plate location extension is free to move between the bridge clamps when secured and that the handbrake mechanism is operating satisfactorily.

JAGUAR SERVICE BULLETIN

Number L.44
Section Brakes

Date September, 1966

BRAKE FLUID - CASTROL/GIRLING

DUNLOP Disc Brake/Clutch Fluid, "Recommended Hydraulic Fluid" in current Owner's Handbooks and Service Manuals, has now been deleted from the specification and replaced with CASTROL/GIRLING CRIMSON Clutch/Brake Fluid.

This fluid also conforms to S.A.E.70R3 specification with a high boiling point factor, but it is desirable that it should not be mixed with other fluids.

The new fluid can be readily identified by the colour which is deep crimson.

JAGUAR SERVICE BULLETIN

Number L.47
Section Brakes

Date January, 1968

BRAKE FLUID RECOMMENDATIONS
ALL MODELS

To all Distributors and Dealers

Your attention is drawn to the point that, although modern brake fluids (to 70R3 specification) are not affected by metal alloys, mouldings, and rubber parts used in the braking system, they can, however, absorb moisture from the atmosphere to varying degrees.

Any moisture content will lower the resistance to freezing and seriously reduce the temperature at which the fluid will boil.

This deterioration, if slight, may not render the brakes unsafe for ordinary use, but full braking power in an emergency or for use in mountainous country may be affected.

It is, therefore, strongly recommended that the brake fluid be renewed every eighteen (18) months. Additionally, if an extended continental journey is to be undertaken, it is recommended that the fluid be renewed before departure if this has not already been done within the previous nine (9) months.

New Castrol/Girling Crimson Brake and Clutch fluid to specification 70R3 should be used, but in an emergency it is permissible to use a reputable brand of brake fluid provided it conforms to the correct specification.

For all flushing and cleansing purposes use Girling Cleaning Fluid which is specially produced and economically priced for this purpose.

Fluid from the system MUST be discarded.

DUNLOP DISC BRAKE PRESERVATIVE FLUID

Despite the information given in Bulletin L.31 (March, 1964) it is obvious from repeated complaints of sticky wheel cylinders, etc., received by Jaguar Service Division that advice given regarding the use of Dunlop Disc Brake Preservative Fluid is, in the majority of cases, being totally ignored.

It is considered ESSENTIAL, in an attempt to mitigate the increasing number of complaints, that the service details quoted in Bulletin L.31 be STRICTLY adhered to.

All Distributors and Dealers are requested to ensure that the need to use Disc Brake Preservative Fluid as an essential item when servicing the brakes is impressed upon Service staffs.

The fluid is available from Jaguar Spares Division in 8 oz. tins (Part No. 10263) and is equally suitable for DUNLOP or GIRLING brake systems.

JAGUAR SERVICE BULLETIN

Number L.50
Section Brakes

Date July, 1968

VACUUM RESERVOIR CHECK VALVE

In the interests of road safety all Jaguar Distributors are requested to inspect the condition of the vacuum reservoir check valve on models where the reservoir is fitted beneath the wheel arch.

Provision is made during manufacture to protect the valve against salt corrosion, but adverse conditions may break through this protective coating.

It is, therefore, recommended that a check be made for correct operation at convenient servicing periods.

The valve and surrounding area should be thoroughly cleaned before removing for checking purposes and care should be taken to ensure that no dirt enters the system.

Any valve shown to be faulty must be replaced with a new unit, no repairs being permissible.

JAGUAR

SERVICE BULLETIN

Number L.51
Section Brakes

Date December, 1968

BRAKE VACUUM RESERVOIR
(Mark 2 models)

It is apparent that the instructions regarding examination of the Brake Vacuum Reservoir fitted under the right-hand front wing which were advised in Service Bulletin L.32 (dated June, 1964) have been ignored in some cases.

Attention is drawn to the requirement for periodic inspection for security. Additional anchorage was provided by the introduction of a Fixing Rdd Assembly secured between the Stoneguard on the Reservoir and the Vacuum Servo Cowl, and the commencing Chassis numbers are quoted in Service Bulletin L.32, together with details of the items required and fixing instructions.

All Distributors and Dealers are urged to arrange for the Vacuum Reservoir and its mounting points to be carefully checked each time normal servicing is being carried out and THE FIXING ROD ASSEMBLY TO BE INSTALLED in all cases where this has not already been done. No claim for parts when introducing this modification can now be allowed.

It is most important that inspection of the Reservoir, mounting brackets, etc., should be carried out on all cars which have completed a fair mileage or have been subjected to long periods of standing. Particularly careful examination is necessary following bad weather conditions when use of salt may have an adverse effect.

JAGUAR

SERVICE BULLETIN

Number L.68
Section Brakes

Date October, 1970

LOCKHEED BRAKE VACUUM SERVO UNIT

Models affected
2.4/3.4 litre Mark 1
2.4/3.4/3.8 litre Mark 2
240
340

Brake Servo units fitted to the above models are no longer supplied by Messrs. Automotive Products Ltd., on an exchange basis and the exchange scheme operated by Jaguar Cars Ltd., therefore ceases forthwith. It will be necessary for Servo units to be overhauled by Distributors and Dealers for which purpose a comprehensive range of Service Kits are available from Jaguar Spares Division. Part numbers of the Service Kits are listed in the relevant Spare Parts Catalogues whist procedure for the overhaul of these units is fully described in applicable Service Manuals.

JAGUAR

SERVICE BULLETIN

Number L.68
Section Brakes

Date October, 1970

LOCKHEED BRAKE VACUUM SERVO UNIT

Models affected
2.4/3.4 litre Mark 1
2.4/3.4/3.8 litre Mark 2
240
340

Brake Servo units fitted to the above models are no longer supplied by Messrs. Automotive Products Ltd., on an exchange basis and the exchange scheme operated by Jaguar Cars Ltd., therefore ceases forthwith. It will be necessary for Servo units to be overhauled by Distributors and Dealers for which purpose a comprehensive range of Service Kits are available from Jaguar Spares Division. Part numbers of the Service Kits are listed in the relevant Spare Parts Catalogues whist procedure for the overhaul of these units is fully described in applicable Service Manuals.

JAGUAR

SERVICE BULLETIN

Number L.2
Section Brakes

Sheet 1 (of 1)
Date March, 1960

MINTEX M.33 BRAKE PADS

Models affected

All disc brake cars with quick changes pads

In future only Mintex M.33 friction pads will be supplied from the Jaguar Spares Department for replacement purposes.

These pads are interchangeable with the Ferodo DS.5 quick change pads fitted to earlier cars but they must not be mixed when fitted to an individual car.

The part numbers of the Mintex M.33 pads are as follows:-

	2.4 litre, 3.4 litre XK.150	Mark 1X
Friction pads (8 off)	7937	-
Friction pads - front (4 off)	-	7936
- rear (4 off)	-	7937

The chassis numbers at which Mintex M.33 pads were introduced are as follows; the XK.150 chassis numbers will be advised at a later date.

Model	Commencing Chassis Numbers R.H. Drive	L.H. Drive
2.4 litre - disc wheels	914891	943531
- wire wheels	915136	943568
3.4 litre - disc wheels	977498	992317
- wire wheels	977791	992531
Mark 1X	771535	790835
XK.150 - Open 2-seater		
- Drop Head Coupe		
- Fixed Head Coupe		

JAGUAR

SERVICE BULLETIN

Number L.3
Section Brakes

Sheet 1 (of 1)
Date March, 1960

HANDBRAKE CONNECTING LINK

Models affected	Commencing Chassis numbers	
	R.H. Drive	L.H. Drive
XK.150 - Drop Head Coupe	827510	-
- Fixed Head Coupe	-	836724

On cars with the above chassis numbers and onwards a longer handbrake connecting link is fitted to improve the efficiency of the handbrake. The connecting link has two holes at its lower end and for maximum efficiency the pin securing the link to the handbrake cross-shaft lever must be inserted in the lower hole.

The new connecting link (Part number C.16866) may be used to replace the previous link (Part number C.8316) on cars prior to the above chassis numbers.

VACUUM CYLINDER LUBRICANT

Models affected

Cars fitted with a Lockheed servo

The vacuum cylinder oil "Cosmolubic 100" recommended for lubrication of the vacuum cylinder (see pages L.38 and L.42 of the 2.4/3.4 litre Service Manual) has now been superseded by "Shell Tellus 33".

"Shell Tellus 33" is available in eight ounce plastic bottles.

JAGUAR

SERVICE BULLETIN

Number L.27.
Section Brakes.

Sheet 1 (of 1)
Date August, 1963.

MODIFIED HANDBRAKE COMPENSATOR.

Model affected.	Commencing Chassis Numbers.	
	R.H.Drive	L.H.Drive.
'E' Type Open 2 Seater	850728	879551
Fixed Head Coupe	861203	888760

Commencing at the above chassis numbers the handbrake compensator inner lever link is replaced by an inner fork end (C.22953) and outer fork end (C.22954) which are attached to the compensator with a clevis pin (J.105/10).

The outer fork end has a screwed portion which retains the inner fork end with a locknut (UFN.225/L) and therefore provides a greater amount of movement to the self adjusting handbrake mechanism which is usually only necessary on initial assembly.

If trouble is experienced with the handbrake calipers binding due to insufficient range of adjustment in the handbrake mechanism, the inner lever link can be removed by drilling out the inner retaining pin and replacing with the aforementioned components.

Spares Bulletin No. K.66 refers.

CONVERSION OF MARK 1 2.4/3.4 LITRE DISC BRAKED CARS TO SELF ADJUSTING HANDBRAKES.

A kit is now available from the Spares Division for converting Mark 1 2.4/3.4 litre disc brake cars to the self adjusting type handbrake as fitted to current models.

The efficiency of the handbrake on Mark 1 cars is greatly improved with the fitting of this kit.

/cont'd.....

Remove and discard the following parts.

1. Handbrake lever - cross-shaft to fork end.
2. Fork end from primary cable.
3. Handbrake compensator assembly (R.H.Drive).
4. Handbrake pad carrier assemblies (4 off).

Fit the following parts.

1.	Self adjusting pad carrier (R.H.) for Square pad type brakes. Self adjusting pad carrier (L.H.) for Square pad type brakes.	9677
2.	Self adjusting pad carrier (R.H.) for Round pad type brakes. Self adjusting pad carrier (L.H.) for Round pad type brakes.	9676
3.	Handbrake lever - cross-shaft to fork end R.H.D. or/ Handbrake lever - cross-shaft to fork end L.H.D.	C.15511 C.16213
4.	Compensator assembly - 2.4 litre 3.4 litre	C.15515 C.20745
5.	Cable - compensator lever to caliper (R.H.) Cable - compensator lever to caliper (L.H.)	C.20635 C.20636
6.	Primary cable.	C.15512
7.	Fork end.	C.14789
8.	Universal jaw.	C.16214
9.	Setscrew	UFS.131/6R
10.	Spring washer.	FG.105/X
11.	Joint pin (6 off).	J.105/11S
12.	Split pin (7 off)	L.103/7U
13.	Washer (7 off)	FW.105/T
14.	Nut.	UFN.135/L
15.	Joint pin.	J.105/12S

The handbrake cable arrangement is shown on page L18 of the Mark 2 Service Manual.

For details of fitting instructions refer to pages L-s 3 and 4 of the Mark 2 Service Manual.

JAGUAR SERVICE BULLETIN

Number L.36.
Section Brakes.

Sheet 1 (of 1)
Date December, 1964.

BRAKE SQUEAL.

(Series 2 Dunlop Disc Brakes)

Models affected.

Later Mark 1 2.4 and 3.4 litre
Mark 2 2.4, 3.4 and 3.8 litre
Mark 1X
XK.150
Mark 10 (3.8)
'E' Type (3.8 and 4.2)

In the event of this problem being encountered, the following action should be taken. It should be noted, that occasional slight squeak on first application from cold must be accepted.

Brake noise can take the following forms:

(a) Heavy squeal on most applications.
(b) Running squeak due to contact between main pads and disc.
(c) Running squeak due to contact between handbrake pads and rear discs.
(d) Intermittent squeak, pronounced when cornering, due to hand-brake pads in contact with rear discs.

Rectification falls into two categories:

Attention to main pads. (See Section A).
Attention to handbrake mechanism (See Section B).

The causes and remedial measures are not shown as a sequence of operation but Distributors and Dealers will act according to their findings.

SECTION A.

Symptom:- Heavy squeal on application or continuous running squeak without application.

1) Check that pads are all free in guides. Push back piston fully and refit pads correctly on pistons.

2) Check whether disc turns freely or that clearance exists between all main pads and discs when pedal is released after application. Lack of clearance indicates inadequate retraction for some reason.

/cont'd.....

NOTE: Use light pressure only - approximately 10 lbs (4.5 kg) pedal effort. If unbedded pads are fitted, clearance may not be measurable but disc should turn reasonably freely by hand.

Lack of retraction may be due to:

(a) Pads sticking in caliper.
(b) Wheel cylinder pistons sticking in cylinder or guide location for backing plate.
(c) Disc float due to excess end float in front hub bearings or axle shaft, as case may be.
(d) Disc run out due to machining of mounting flange or disc, dirt between faces, bent half shaft, etc.
(e) Sticking master cylinder piston affecting front, rear or all main pads, depending on model.

Remedial Action:-

(a) Remove pads, check for any corrosion or dirt build up and that backing plate has been properly engaged with button on piston. Check for undue marking on pad due to pressure by retaining clip. Clean up all side faces of pads and refit.

(b) If retraction is still not satisfactory, remove calipers, thoroughly clean off corrosion and accumulated dirt, but do not use abrasive, which would destroy cadmium plating. On Series 2 brakes fit wheel cylinder assemblies incorporating recess around pad mounting button on piston. If satisfactory retraction is not obtained, fit new caliper body using new wheel cylinder assemblies already on hand.

(c) Rectify end float condition in accordance with limits laid down in Service Manual.

(d) If excessive run out exists, check hub flange face, output flange face or for bent axle shaft as applicable and if satisfactory, replace disc and re-check.

(e) Check for sluggish return of master cylinder piston: if evident, service with appropriate repair kit, providing cylinder bore is satisfactory.

SECTION B.

Symptom:- Running squeal or intermittent squeal when cornering:

Remedial Action:-

1) Check that handbrake operating system is free and permits full return of handbrake. Note on Mark 2 cars the axle should be supporting the car to enable adjustment state to be checked.

2) Check end float of rear discs.

3) Check for oil contamination of handbrake.

4) Check adjuster mechanism for free movement and freedom from corrosion.

5) Re-adjust handbrake mechanism in accordance with instructions in Service Bulletin No. L.21.

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SERVICE BULLETIN

Number L.68
Section Brakes

Date October, 1970

LOCKHEED BRAKE VACUUM SERVO UNIT

Models affected
2.4/3.4 litre Mark 1
2.4/3.4/3.8 litre Mark 2
240
340

Brake Servo units fitted to the above models are no longer supplied by Messrs. Automotive Products Ltd., on an exchange basis and the exchange scheme operated by Jaguar Cars Ltd., therefore ceases forthwith. It will be necessary for Servo units to be overhauled by Distributors and Dealers for which purpose a comprehensive range of Service Kits are available from Jaguar Spares Division. Part numbers of the Service Kits are listed in the relevant Spare Parts Catalogues whist procedure for the overhaul of these units is fully described in applicable Service Manuals.

January, 1958.

J A G U A R

S E R V I C E A N D S P A R E S O R G A N I S A T I O N

SERVICE BULLETIN NO.236

DISC BRAKES AND WIRE SPOKE WHEELS-CONVERSION KITS.

Models affected.

2.4 litre
3.4 litre

For customers who purchased cars just prior to the introduction of Disc brakes and Wire spoke wheels as optional equipment and who may have expressed a desire to have their cars converted, the above kits are now available from the Jaguar Spares Department. Instructions for carrying out these conversions will be included with each kit.

Requests for these kits should be made on a separate order form and the following particulars given:-

Model - 2.4 litre or 3.4 litre.
Right - hand or Left - hand Drive.
Chassis number of vehicle (if possible).

FOR CONVERTING DRUM BRAKES TO DISC BRAKES ONLY

Requirements:-

Kit A (Part number 7389)

plus items listed below to suit the particular model.

		2.4 litre	3.4 litre
Handbrake compensator assembly	R.H.Drive	C.13873	C.13875
	L.H.Drive	C.13874	C.13876
Vacuum Check Valve		C.12790	-
Vacuum check mtg. plate		C.12798	-
Sleeve nut		C.12799 (2 off)	-
Bolt		UFB.125/7R(2 off)	-
Setscrew		UFS.125/5R(2 off)	-
Plain washer		FW.104/T (2 off)	-
Spring washer		FG.104/X (4 off)	-
Nuts		NN.125/L (2 off)	-
Vacuum pipe		C.13963 (1 off)	-
Vacuum pipe		C.13962 (1 off)	-
Hose - check valve		C.13964 (2 off)	-
Hose		C.14135 (1 off)	-
Hose		C.13965 (1 off)	C.13704
Adaptor plate		-	C.13254

Cont'd.....

FOR CONVERTING DRUM BRAKES TO DISC BRAKES
AND DISC WHEELS TO WIRE SPOKE WHEELS.

Requirements:-

Kit B (Part number 7390)
Kit C (Part number 7391)

plus items listed below to suit the particular model.

		2.4 litre	3.4 litre
Handbrake compensator assembly	R.H.Drive	C.13873	C.13875
	L.H.Drive	C.13874	C.13876
Vacuum Check Valve		C.12790	-
Vacuum check mtg. plate		C.12798	-
Sleeve nut		C.12799 (2 off)	-
Bolt		UCB.125/7R(2 off)	-
Setscrew		UFS.125/5R(2 off)	-
Plain washer		FW.104/T (2 off)	-
Spring washer		FG.104/X (4 off)	-
Nuts		HN.125/L (2 off)	-
Vacuum pipe		C.13963 (1 off)	-
Vacuum pipe		C.13962 (1 off)	-
Hose - check valve		C.13964 (2 off)	-
Hose		C.14135 (1 off)	-
Hose		C.13965 (1 off)	C.13704
Adaptor plate		-	C.13254

FOR CONVERTING FROM DISC WHEELS TO WIRE SPOKE WHEELS ONLY

Requirements:-

Kit C (Part number 7391)

PRICES.

	Retail Price.
Kit A (Part number 7389) (including the individual items required)	£100
Kit B (part number 7390) (including the individual items required)	£80
Kit C (Part number 7391)	£83

Extras

Fully chrome wire wheels - extra cost per wheel £7. 19. 6d.

2.4 Litre model only.

If converting from disc wheels to wire spoke wheels it will be necessary to fit the following additional parts:-

5 inner tubes (if existing tyres are tubeless type) £1. 8. 0d.each

2 rear wheel valances (cut-out type) £4. 2. 0d.each

Index Reference. Section L. and M.

FOR CONVERTING DRUM BRAKES TO DISC BRAKES
AND DISC WHEELS TO WIRE SPOKE WHEELS.

Requirements:-

Kit B (Part number 7390)
Kit C (Part number 7391)

plus items listed below to suit the particular model.

		2.4 litre	3.4 litre
Handbrake compensator assembly	R.H.Drive	C.13873	C.13875
	L.H.Drive	C.13874	C.13876
Vacuum Check Valve		C.12790	-
Vacuum check mtg. plate		C.12798	-
Sleeve nut		C.12799 (2 off)	-
Bolt		UCB.125/7R(2 off)	-
Setscrew		UFS.125/5R(2 off)	-
Plain washer		FW.104/T (2 off)	-
Spring washer		FG.104/X (4 off)	-
Nuts		HN.125/L (2 off)	-
Vacuum pipe		C.13963 (1 off)	-
Vacuum pipe		C.13962 (1 off)	-
Hose - check valve		C.13964 (2 off)	-
Hose		C.14135 (1 off)	-
Hose		C.13965 (1 off)	C.13704
Adaptor plate		-	C.13254

FOR CONVERTING FROM DISC WHEELS TO WIRE SPOKE WHEELS ONLY

Requirements:-

Kit C (Part number 7391)

PRICES.

	Retail Price.
Kit A (Part number 7389) (including the individual items required)	£100
Kit B (part number 7390) (including the individual items required)	£80
Kit C (Part number 7391)	£83

Extras

Fully chrome wire wheels - extra cost per wheel £7. 19. 6d.

2.4 Litre model only.

If converting from disc wheels to wire spoke wheels it will be necessary to fit the following additional parts:-

5 inner tubes (if existing tyres are tubeless type) £1. 8. 0d.each

2 rear wheel valances (cut-out type) £4. 2. 0d.each

Index Reference. Section L. and M.

March, 1958.

J A G U A R

S E R V I C E A N D S P A R E S O R G A N I S A T I O N

SERVICE BULLETIN NO. 241

MODIFICATION TO OVERCOME HANDBRAKE CROSS CABLES FOULING BODY.

Models affected.

2.4 litre cars fitted with disc brakes
3.4 litre cars fitted with disc brakes

If complaints are received of the handbrake cross cables fouling the rear wheel arch when the car is heavily laden, the following modification can be carried out on a guarantee basis.

This modification was introduced in production at the following chassis numbers:-

	R.H. Drive.	L.H. Drive.
2.4 litre	910118	942854
3.4 litre	972401	988216

Parts required.

7492	Inner pad carrier assembly. Right hand	1
7493	Inner pad carrier assembly. Left hand	1
7494	Operating Lever	2
6926	Clevis pin	2
J.105/11.5S	Clevis pin	2
FW.105/T	Plain washer	2
L 102/4U	Split pin	2
L.103/7U	Split pin	2
6925	Setscrew securing Handbrake to Caliper	2
6932	Tab washer	2
C.13871	Handbrake cross cable	1
C.13872	Handbrake cross cable	1
	Handbrake Compensator Bracket - as detailed below for various models.	
C.14258	2.4 litre - Right hand drive	1
C.14259	2.4 litre - Left hand drive	1
C.14260	3.4 litre - Right hand drive	1
C. ~~12461~~ 14261.	3.4 litre - Left hand drive	1
7481	Luggage compartment floor-patch plate	1

Modification to Caliper Handbrake.

It is necessary to replace each inner pad carrier and lever with the modified type supplied.

Disconnect the handbrake cross cable from the handbrake lever.

Unscrew the adjuster bolt completely to separate the inner and outer pad carriers.

Tap back the tab washers and remove the setscrew securing the inner pad carrier to the caliper.

Remove the inner pad carrier. When fitting the new carriers note that they are handed; the top end of the friction pad should conform with the periphery of the brake disc.

Cont'd.....

Fit the new inner pad carrier to the caliper using a new tab washer and setscrew if necessary. Lubricate the setscrew with zinc base grease on assembly. Attach the handbrake lever to the inner pad carrier as follows:-

Place the lever against the inner carrier. Hold the locknut firmly against the outer face of the trunnion and screw in the adjuster bolt until three or four threads engage the locknut.

Align the holes in the lever and pivot seats, fit the pivot pin and lock it with the split pin.

Note: The above procedure is described and illustrated under "Relining the Handbrake" in Disc Brake Descriptive and Maintenance Notes for the XK.150 model.

Do NOT fit the pivot pin connecting the lever to the inner pad carrier until the adjuster bolt has been screwed a few turns into the locknut otherwise the return spring will not be preloaded.

Repeat for the other rear brake.

Fitting the modified Compensator Bracket.

Disconnect the fork end at the front end of the handbrake cable.

Remove the self-locking nut which secures the handbrake compensator to the bracket attached to the rear axle. Remove the two setscrews securing the bracket to the rear axle. Replace the existing bracket with the modified type supplied.

Secure the bracket to the rear axle with the existing setscrews and attach the compensator to the bracket.

Fit the two cross cables supplied so that the fixed fork ends are connected to the compensator on the rear axle.

Adjust the handbrake and handbrake cables as follows:-

Screw in the handbrake adjuster bolt at each rear brake until the handbrake pads are in hard contact with the brake discs.

Fully release the handbrake lever. Remove the clevis pin securing the fork end to the operating link at the front of the main cable. Slacken the locknut and adjust the position of the fork end so that with the clevis pin refitted there is no slack in the main cable and the two cross cables. It is, however, important to ensure that the cables are not under tension.

Unscrew the adjuster bolt and insert a .004" (.10 mm) feeler gauge between the face on one handbrake pad the disc. Screw in the adjuster bolt until the feeler gauge is just nipped. Withdraw feeler gauge and check disc for free rotation. Repeat for the other side.

Modification to Luggage Compartment Floor.

To provide adequate clearance for the handbrake compensator in its new position it is necessary to cut out one of the longitudonal depressions in the trunk floor and weld in the patch plate provided.

It will be noted that there are six depressions in the trunk floor; for Left hand drive cars the patch plate should be fitted to the **third** depression from the left and for right hand drive cars the patch plate should be fitted to the third depression from the right - see sketch.

Using the patch plate as a template mark out the portion to be cut out. Cut out the portion marked so that when the plate is welded in position it will be flush with the surrounding metal.

Cont'd.....

If there is already a small patch plate welded in the depression this can be cut out to allow the patch plate supplied to be fitted.

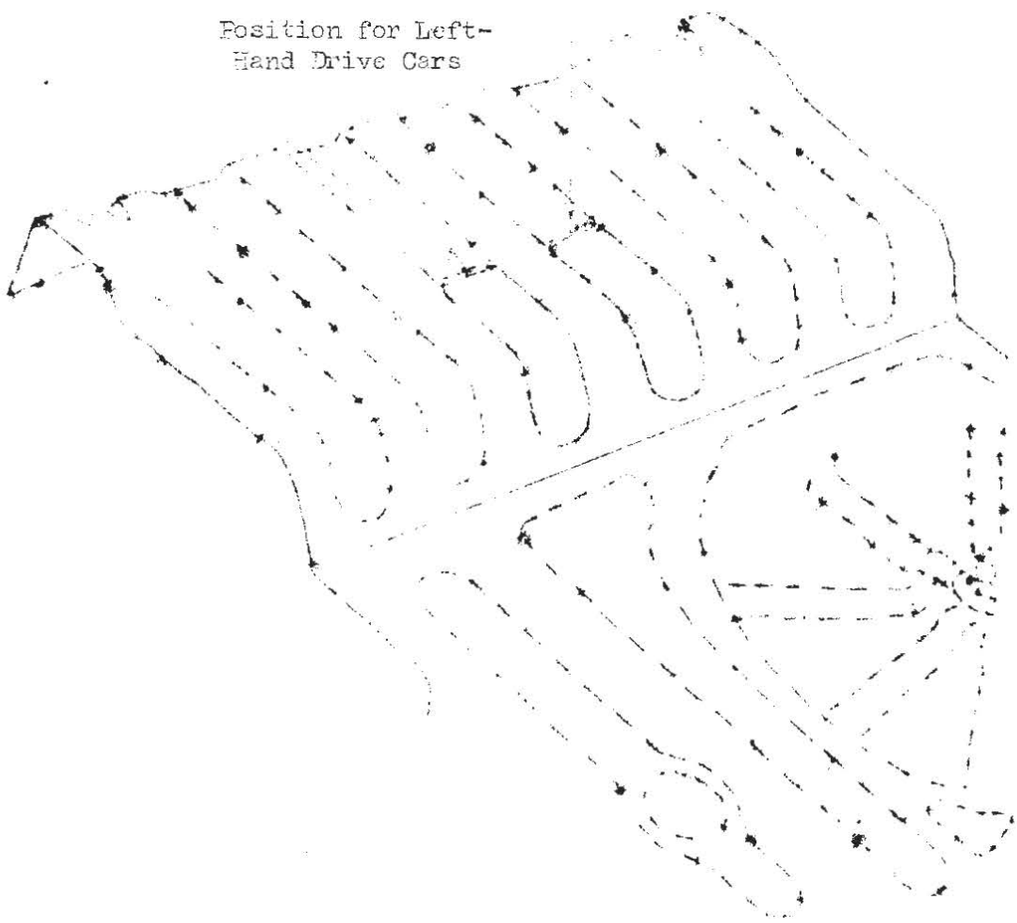
Note: On Right-hand drive cars it will facilitate the use of a hacksaw if the spare wheel cover plate and spare wheel are removed.

Modification to Wheel Arch.

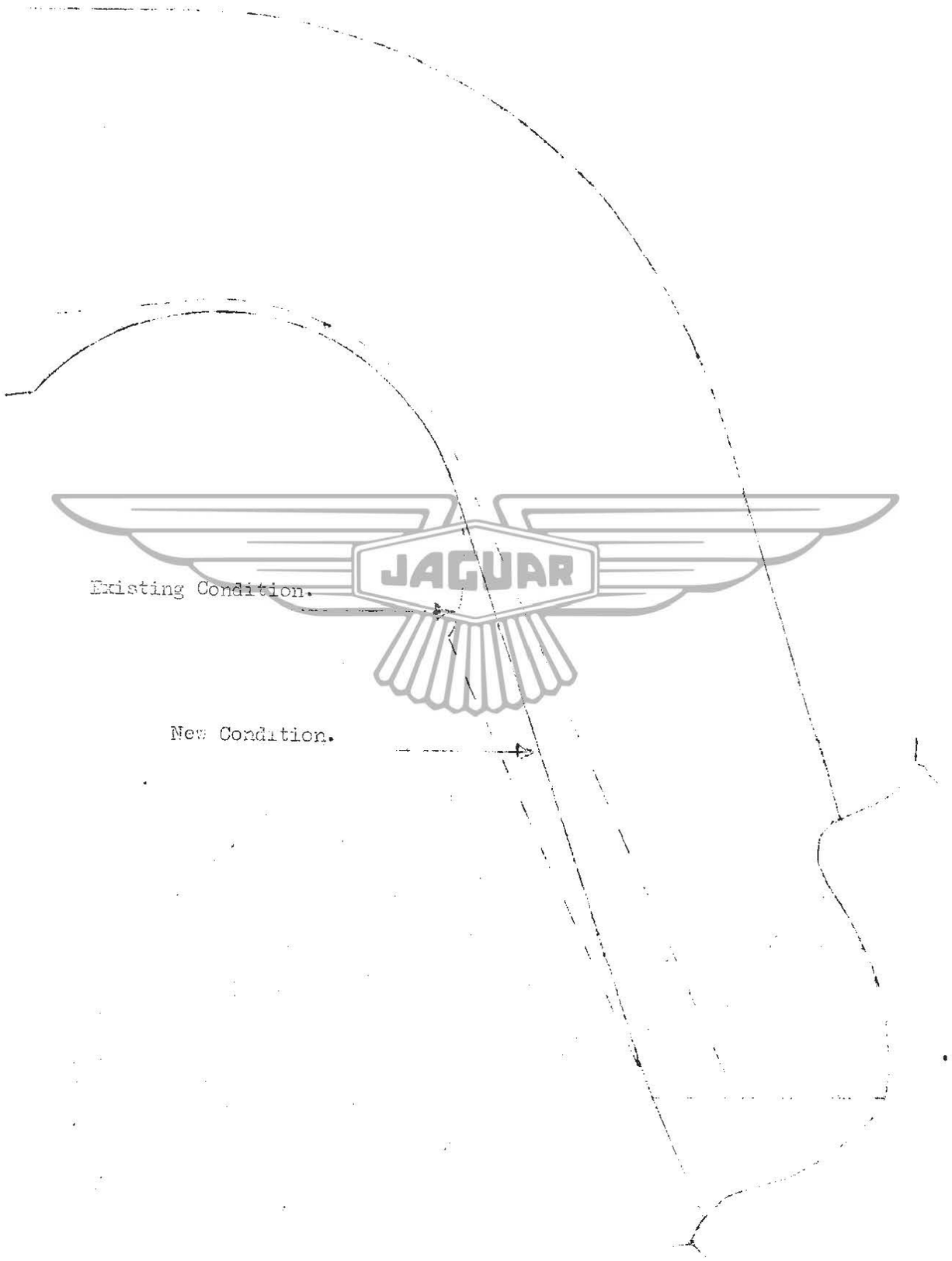
The flange of the chassis side member should be knocked back with a mallet flush with the box section as illustrated in the following sketch.

Note: It is IMPORTANT to carry out the above two body modifications otherwise fouling will take place between the handbrake compensator and trunk floor, and also between the handbrake cross cables and the wheel arches.

MODIFICATION TO LUGGAGE COMPARTMENT FLOOR.



MODIFICATION TO WHEEL ARCH.



Index Reference. Sections L and N.

MAY, 1958.

JAGUAR

SERVICE AND SPARES ORGANISATION

SERVICE BULLETIN NO. 246.

MODIFICATION TO DISC BRAKE MASTER CYLINDER.

Models affected

2.4 litre cars fitted with disc brakes.
3.4 litre cars fitted with disc brakes.
XK.150 cars fitted with disc brakes.

To deal with cases where a long brake pedal action is sometimes experienced on the first application of the brake pedal when the car has been standing, but normal pedal action is obtained on the second action of the pedal the following modification has been introduced in production commencing with chassis numbers:-

	Right-hand drive	Left-hand drive.
2.4 litre	910970.	943035.
3.4 litre.	973377.	988746.
XK.150 Open 2 seater.	-	830438.
XK.150 Drop head coupe.	827072.	837434.
XK.150 Fixed head coupe.	824420.	835566.

and certain individual cars prior to these numbers.

IDENTIFICATION

Externally the Master Cylinder remains unchanged but is identified by a cable clip bearing the following relative new part numbers, fitted to the barrel of the Master Cylinder between the flange fitting and the outlet boss.

XK.150.	C.14580	(VBM 3248)
2.4/3.4 litre.	C.14579	(VBM 3249)

INTERNAL MODIFICATION

The following parts become redundant:-

Part Number.		
6950	Seal	Item 9, Plate C on page 21 of the Disc Brake Spare Parts Catalogue.
6949	Bush	Item 10, " " " "
6952	Valve	Item 7, " " " "
6941	Spring Support	Item 6," " " "

and are replaced by the following new parts:-

Dunlop Part Number.	
VBO 3541	Seal
VBO 3539	Valve
VBO 3540	Spring Support

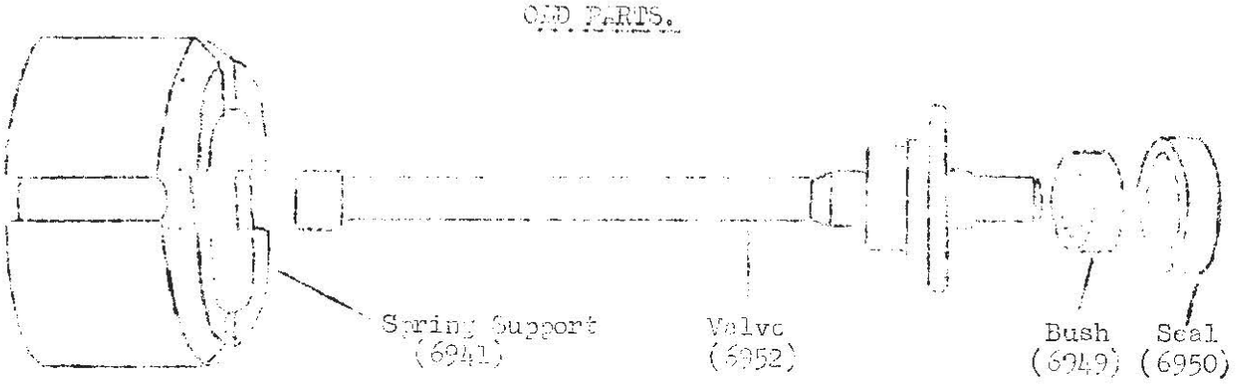
Note: A separate bush for the seal is no longer used. The drawings on the next page show the difference between the old and the new parts. The differences between the old and new parts are easily recognisable except in the case of the spring supports between which there is no visible difference. The old type spring support must not, in any instance, be refitted.

Cont'd....

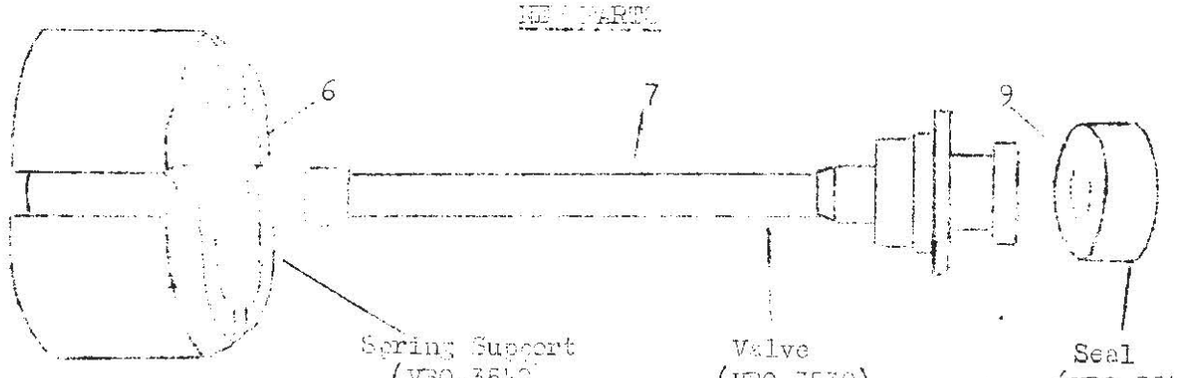
INSTRUCTION FOR MODIFYING RH MASTER CYLINDER
(Refer to Plate C on page 21 of the Disc Brake Spares Catalogue)

(1) Withdraw the dust excluder (14) at the push rod end of the master cylinder and with suitable pliers remove the circlip (13).
(2) Remove the push rod (11) and the washer (12).
(3) Withdraw all internal components and dismantle the assembly comprising items (4) to (8) inclusive by disengaging the valve (7) via the key slot in the spring support (5).
(4) Discard the valve seal (9), bush (10), valve (7), rear end spring support (6) and 'O' ring (3).
(5) Clean the cylinder body and all remaining components with methylated spirit or hydraulic brake fluid. Examine the cylinder bore for damage and scoring. If there is evidence of these defects the master cylinder must be replaced by a new unit.
(6) Using the new components (6), (7) and (9) shown in the sketch below reassemble items (4) to (9) inclusive in the order shown and retain them by engaging the valve (7) in the central bore of the spring support (5). NOTE: The old and new spring supports item (6) are almost identical in appearance but it is essential that only the new support is used for this modification.
(7) Lubricate the new 'O' ring (3) with hydraulic brake fluid and fit it to the piston (2).
(8) Slide the internal components into the bore of the cylinder body, position the washer (12) and the push rod (11) and retain them with the circlip (13).
(9) Fill the dust excluder with the special Dunlop rubber grease provided in the modification kit. NOTE: No other grease must be used for this purpose. Refit the dust excluder around the end of the master cylinder, ensuring that the lip registers properly in the groove.
(10) Fit the appropriate identification clip around the master cylinder body, at a point between the attachment flange and the connection bosses.

OLD PARTS.



NEW PARTS.



SERVICE ACTION - EXPORT

All Distributors will be supplied with a small stock of modified Master Cylinders -

Part Number.

C.14580	XK.150.
C.14579	2.4 litre/3.4 litre

together with a supply of Master Cylinder Repair Kits Part Number 7660.

In every case when a report of long pedal action after standing is received the Master Cylinder is to be changed immediately for the modified type.

It is also considered desirable that all Master Cylinders of the original type not having a cable clip bearing the new part number should be changed as soon as is practicable. This operation is to be carried out on a guaranteed basis irrespective of the age of the car.

The Distributor must withdraw from his Dealers all stocks of the following Master Cylinders -

Part Number.

C.13100 and C.14224	XK.150.
C.13675 and C.14225	2.4/3.4 litre.

and proceed as follows:-

1. All Master Cylinders having an aluminium body (Part numbers C.13100 and C.13675) are to be scrapped and a claim submitted for these units.

2. All Master Cylinders having a cast iron body (Part numbers C.14224 and C.14225) are to be reconditioned by the Distributor incorporating the modified parts included in Master Cylinder Repair Kit Part number 7660 which contains:-

	Dunlop Part Number
Dust Excluder	VBO.1869
'O' Ring	VBO.2417
Valve	VBO.3539
Seal	VBO.3541
Spring Support	VBO.3540
Tube of Rubber grease	VBO.3554
Identification Cable clip	VBO.3552 and VBO.3553
Fitting Instruction Sheet	-

Spare Parts Replacement

All stocks of the following parts held by Dealers are to be returned to their Distributor for credit.

Part Number.

6950	Seal
6949	Bush
6952	Valve
6941	Spring Support

These parts, or the new parts that replace them, will no longer be supplied as individual replacements parts. The new parts will form part of a new Master Cylinder Repair Kit - Part number 7660.

The Distributor is to scrap out these parts including their own stocks and submit a guarantee claim for the parts scrapped.

(P) Cont'd....

FEBRUARY, 1959.

J A G U A R

S E R V I C E A N D S P A R E S O R G A N I S A T I O N

SERVICE BULLETIN NO.261

BRAKES - MAINTENANCE AND RECTIFICATION

IMPORTANT

The following information is given to ensure more satisfactory brake maintenance and to simplify the handling of complaints.

Contents

	Page
Brake Maintenance	1
Brake Fluid Level	1
Long Pedal Travel - Rectified by Bleeding Brakes	2
Long Pedal Travel - Self Rectified When Car Has Been Standing	2
Long Pedal Travel on Road and When Stationary - Not Corrected by Bleeding	3
Long Pedal Travel on Road but Normal Pedal Travel When Stationary	3
Excess Braking on Front Wheels	4
Brakes Hanging on	4
Brakes Pulling, Locking or Knocking on Brake Application ...	4
Whistle from Engine	4

BRAKE MAINTENANCE

1. Ensure that only the brake fluids specified in Service Bulletin No. 242 are used.
2. Check the brake fluid level in the Reservoir on <u>every</u> occasion a customers car is in your hands for service and if the level is low investigate as detailed below.
3. Check for brake lining or friction pad wear whenever you carry out regular maintenance service and advise the owner if re-lining is necessary immediately or in the near future.
4. Fully bleed the hydraulic system and refill with new brake fluid whenever a brake re-line or overhaul is carried out.
5. Check the condition of the rubber brake hoses and the rubber servo hose connections when carrying out a brake re-line or overhaul.

RECTIFICATION

BRAKE FLUID LEVEL

If the brake fluid level in the reservoir is found to be low <u>always</u> make a careful check to find out <u>WHY</u> before topping up.

/Cont'd...

There will be a progressive reduction in level consistent with lining or pad wear due to the increased fluid volume contained in the wheel cylinders but if the fluid level has dropped to any extent carefully check the following points for fluid loss.

1. Push rod end of brake master cylinder.

   If any trace of fluid is found on the push rod, pull back the rubber boot and observe whether there is evidence of brake fluid leaking past the master cylinder piston seal. If this condition exists fit a replacement master cylinder or overhaul the existing unit.

2. Apply and maintain full pressure at the brake pedal and carefully examine all brake connections and wheel cylinders for fluid loss. Note in the case of drum brake cars, when checking the wheel cylinders, pressure at the pedal should be maintained for some minutes and the drums then removed for inspection of the wheel cylinders.

   If when pressure is maintained on the brake pedal the pedal progressively sinks, examine all connections and wheel cylinders and if no fluid loss is found, the loss of pressure should be traceable to the master cylinder recuperation seal or main seal. Fit a replacement master cylinder or overhaul the existing unit. Fully bleed the system and repeat the above pressure check.

If low fluid level is found and the foregoing checks do not reveal reason for fluid loss but fluid level is low enough to suggest loss is definitely occurring, measure the fluid level in the reservoir. Leave car standing without engine being run for 12/24 hours and re-check level. If level has dropped, remove brake servo (without having re-started engine) dismantle servo and examine for evidence of brake fluid having entered the servo vacuum cylinder or the servo operating valve chamber. If brake fluid is found, fit a replacement servo or replace all the seals in the servo unit.

LONG BRAKE PEDAL TRAVEL - RECTIFIED BY BLEEDING BRAKES

This complaint can only be due to air getting in the hydraulic system. If you deal with a car on which the brake pedal has to be pumped when the car is stationary to obtain a normal brake pedal action but bleeding the system produces normal brake pedal action, do not release the car until you have traced the reason for air getting into the hydraulic system.

Possible causes are:-

(a) Air entry past servo piston rod seal (for Mark V11 and Mark V111 Clayton-Dewandre servos see Service Bulletin No.260)

(b) Air entry past servo plunger seal.

(c) Air entry past wheel cylinder seals.

(d) Air entry past master cylinder main seal (in this case bleeding will probably be difficult).

(e) Air in hydraulic system due to brakes having being overheated and the fluid vapourised.

LONG PEDAL TRAVEL - SELF RECTIFIED WHEN CAR HAS BEEN STANDING

This complaint arises due to severe overheating of the brakes and boiling of the brake fluid - self rectified when fluid cools, and can be due to:-

/Cont'd.

(a) Servo vacuum piston not fully returning and in this case all four brakes will show signs of having being overheated.

(b) Insufficient free movement on master cylinder push rod, again all four brakes with show signs of overheating.

(c) Automatic Transmission cars only.
Fault in anti-creep pressure switch (at rear of transmission unit) holding rear brakes on. Rear brakes only will show signs of overheating.

(d) Car has been driven with hand brake on - rear brakes only will show signs of overheating.

Note: In the event of the brakes having been overheated the wheel cylinder piston seals should be examined. In the case of disc brake cars overheating of the wheel cylinder piston seals will result in loss of interference and long pedal action ON ROAD

LONG PEDAL TRAVEL ON ROAD AND WHEN STATIONARY - NOT CORRECTED BY BLEEDING

This complaint is only likely to occur on drum brake cars for the following reasons:-

Girling Brakes (Mark V11 and Mark V111)

(a) Rear brakes not in adjustment.

(b) No friction between front brake self adjuster friction pads and brake shoe webs.

(c) Front brake shoes incorrectly set up relative to drums (see Service Bulletin No.256), or drums badly out of round.

Lockheed Brakes

(a) Rear brake self adjusters not operating.(2.4/3.4 litre only)

(b) Front brake self adjuster ratchet broken and/or no friction on self adjustment friction pads.

(c) Front brake shoes incorrectly set up relative to drums or drums badly out of round.

LONG PEDAL TRAVEL ON ROAD BUT NORMAL PEDAL TRAVEL WHEN STATIONARY

Disc Brakes

(a) Excess play in front hub bearings.

(b) Excess end float of rear axle shafts.

(c) Excess run out on discs.

(d) Shake back on wheel cylinder pistons (due to insufficient interference between piston seal and wheel cylinder bore - see note under heading "Long pedal travel - self rectified when car has been standing")

Note: If excess disc run out is found check the hub flanges for run out and for dirt between the hub flange and disc mating faces.

Also note when checking Mark 1X rear discs for run out or when setting the calipers relative to the discs, the disc should be securely bolted to the hub flange using suitable distance pieces under the wheel nuts.

Lockheed Drum Brakes

(a) Insufficient friction or broken ratchet on front brake self adjusters.

/Cont'd...

(b) Hydraulic check valve in end of servo (Part No.6466) not maintaining residual line pressure.

Girling Drum Brakes

Insufficient friction on front brake self adjuster friction pads.

Heavy Pedal Action - (sometimes wrongly described by owners as fade).

1. Servo connecting hose-vacuum pipe to inlet manifold take off - collapsed.
2. Vacuum check valve stuck or incorrectly assembled.
3. Servo performance low - sluggish piston or no interference between piston leather and vacuum cylinder.
4. Long brake pedal travel resulting in maximum servo point being passed before full braking effort obtained. (see foregoing paragraph on Long Pedal Travel).

EXCESS BRAKING ON FRONT WHEELS

Disc Brake Cars

Rear brake pads sticking in calipers (check by inserting feeler gauge between pad and disc and note if the feeler is nipped when the brakes are applied).

Drum Brake Cars

(a) Rear wheel cylinder seized. (b) Rear brake shoes fitted incorrectly.

BRAKES HANGING ON

(a) Brakes drag on all four wheels and do not release when the engine is switched off - Servo piston sticking in vacuum cylinder.

(b) Brakes drag on all four wheels but release when engine is switched off - Servo plunger valve sticking.

BRAKES PULLING, LOCKING OR KNOCKING ON BRAKE APPLICATION

The above complaints can be due to:-

(a)

Disc Brake Cars

Slackness of the bolts searing the brake caliper and/or the bolts securing the caliper adaptor plate to the stub axle carrier or rear axle flange.

Drum Brake Cars

Slackness of the bolts searing the brake backplate to the stub axle carrier or the rear axle flange.

(b) Grease or oil on the friction pads - clean off grease or oil from the brake disc with petrol or trichloreythelene.

(c) On the Mark V11, Mark V111 and Mark 1X models slackness of the bolts securing the lower wishbone brackets to the chassis frame. Slackness of the rear spring 'U' bolts.

(d) On the 2.4/3.4 litre models, slackness of the rear spring centre bolts.

WHISTLE FROM ENGINE

An elusive whistle noticed at approximately 1200 r.p.m. on a small throttle opening but not reproduced when car is stationary or coasting in neutral with engine switched off will be traced to an air leak at the servo diaphragm chamber joint face (Lockheed $6\frac{7}{8}$" Servo only)

Index Reference Section L.